



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-524H-T
 UNIQUE ID NUMBER: 4RR037
 COMBUSTOR:
 ENGINE TYPE: MTF

BYPASS RATIO: 4.2
 PRESSURE RATIO (π_{00}): 34.0
 RATED THRUST (F_{00}) (kN): 264.0

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NO _x | SMOKE NUMBER |
|--|------|------|-----------------|--------------|
| D _p /F ₀₀ (g/kN) or SN | 8.0 | 51.2 | 61.5 | 6.9 |
| AS % OF ORIGINAL LIMIT | 40.6 | 43.3 | 57.0 | 37.9 |
| AS % OF CAEP/2 LIMIT (NO _x) | | | 71.2 | |
| AS % OF CAEP/4 LIMIT (NO _x) | | | 82.1 | |
| AS % OF CAEP/6 LIMIT (NO _x) | | | 91.9 | |
| AS % OF CAEP/8 LIMIT (NO _x) | | | 105.8 | |

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

| MODE | POWER SETTING (%F ₀₀) | TIME (minutes) | FUEL FLOW (kg/s) | EMISSIONS INDICES (g/kg) | | | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|--------------------------|-------------|-----------------|--------------|
| | | | | HC | CO | NO _x | |
| TAKE-OFF | 100 | 0.7 | 2.810 | 0.00 | 0.18 | 31.19 | 5.2 |
| CLIMB OUT | 85 | 2.2 | 2.220 | 0.02 | 0.14 | 23.19 | 5.3 |
| APPROACH | 30 | 4.0 | 0.770 | 0.00 | 1.05 | 9.91 | 1.8 |
| IDLE | 7 | 26.0 | 0.260 | 3.31 | 26.17 | 4.16 | 0.5 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 1001 | 1348 | 10871 | 13995 | - |
| NUMBER OF ENGINES | | | | 1 | 1 | 1 | 1 |
| NUMBER OF TESTS | | | | 3 | 3 | 3 | 3 |
| AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX) | | | | 5.2 | 41.7 | 53.1 | 5.3 |
| SIGMA (D _p /F ₀₀ in g/kN, or SN) | | | | | | | |
| RANGE (D _p /F ₀₀ in g/kN, or SN) | | | | 4.39-5.89 | 39.21-45.02 | 51.6-54.1 | 4.7-6 |

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

| | |
|----------------------|---------------|
| BAROMETER (kPa) | 100.2 |
| TEMPERATURE (K) | 287 |
| ABS HUMIDITY (kg/kg) | 0.0053-0.0089 |

FUEL

| | |
|----------|-------|
| SPEC | AVTUR |
| H/C | 1.95 |
| AROM (%) | 16 |

MANUFACTURER: Rolls-Royce plc
 TEST ORGANIZATION: Rolls-Royce plc
 TEST LOCATION: SINFIN-Derby
 TEST DATES: 01/09/1994

REMARKS

1. Data from Certification Report DNS38044

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)